

What is claimed is:

1. A wireless communication device, connected to equipment having a plurality of input/output terminals, comprising:

interface means for connecting equipment having a plurality of input/output terminals;

connection information exchange means for exchanging information on equipment connected to each input/output terminal, with other wireless communication devices;

storage means for storing information on equipment connected to each input/output terminal; and

information transmission/reception means for transmitting and receiving information on equipment connected to input/output terminals which are switched according to the input/output switching operation of said equipment having a plurality of input/output terminals.

2. A wireless communication device according to claim 1, wherein

information on equipment connected to each of said input/output terminals is managed in association with other wireless communication devices, and information on equipment connected to each input/output terminal is transmitted and received according to input/output

switching of said equipment having a plurality of input/output terminals.

3. A wireless communication device according to claim 1, further comprising:

network formation means for forming a wireless network with other wireless communication devices, and

transmission bandwidth reservation means for acquiring a predetermined wireless transmission channel and reserving transmission bandwidth with respect to a wireless communication device serving as a control station of the network according to input/output switching operations of said equipment having a plurality of input/output terminals; wherein

said information transmission/reception means transmits and receives information in a region in which said transmission bandwidth reservation is performed, manages information on equipment connected to each of said input/output terminals in association with other wireless communication devices, and acquires a predetermined wireless transmission channel to perform wireless communication and then transmits and receives information according to input/output switching of said equipment having a plurality of input/output terminals.

4. A wireless communication method, in a wireless communication device connected to equipment having a plurality of input/output terminals, comprising the steps of:

switching input/output of said equipment having a plurality of input/output terminals;

notifying a selected wireless communication device of the utilization of input/output terminals to request information according to said input/output switching; and

transmitting information on equipment connected to each input/output terminal in response to a request for information in said utilization notification step; wherein

information on equipment connected to each of said input/output terminals is managed in association with other wireless communication devices, and information on equipment connected to each input/output terminal is transmitted and received according to input/output switching of said equipment having a plurality of input/output terminals.

5. A wireless communication method, in a wireless communication device connected to equipment having a plurality of input/output terminals, comprising the steps of:

switching input/output of said equipment having a plurality of input/output terminals;

requesting bandwidth acquisition in which a predetermined wireless transmission channel is acquired to perform wireless communication according to said input/output switching;

returning bandwidth utilization notification in response to said bandwidth acquisition request;

requesting information from a selected wireless communication device according to said bandwidth utilization notification; and

transmitting information on equipment connected to each input/output terminal in response to said request of information; wherein

information is transmitted and received in a region in which said transmission bandwidth reservation is performed, information on equipment connected to each of said input/output terminals is managed in association with other wireless communication devices, according to input/output switching of said equipment having a plurality of input/output terminals a predetermined wireless transmission channel is acquired to perform wireless communication, and information is transmitted and received.

6. The wireless communication method according to claim 4 or 5, further comprising the steps of:

requesting each input/output terminal of said equipment having a plurality of input/output terminals to perform registration from each wireless communication device, and

returning registration notification in response to said registration request; wherein

information on equipment connected to each of said input/output terminals is managed in association with other wireless communication devices.

7. A wireless communication device, which is connected to equipment executing an application and performs wireless communication with other wireless communication devices, comprising:

equipment-specific information detection means for detecting equipment-specific information indicating data input/output relations of equipment executing the same application as said application; and

unidirectional device link setting means for mutually setting unidirectional device link relations with other wireless communication devices connected to equipment executing the same application as said application, based on said equipment-specific information.

8. A wireless communication device according to claim 7, further comprising:

information exchange means for exchanging information with other wireless communication devices, wherein equipment-specific information on equipment connected to said other wireless communication devices is exchanged.

9. A wireless communication method, in a wireless communication device connected to equipment executing an application, comprising the steps of:

exchanging, with other wireless communication devices, information indicating data input/output relations of equipment executing the same application as said application; and

mutually setting unidirectional device link relations with other wireless communication devices connected to equipment executing the same application as said application, based on said information indicating input/output relations.

10. A wireless communication method, in a wireless communication device connected to equipment executing an application, comprising the steps of:

detecting a registration signal caused by operation of a registration switch of the other wireless communication device within a predetermined registration information

reception time after detecting a registration signal caused by operation of a registration switch provided on one wireless communication device;

notifying the other wireless communication device of existence information concerning one wireless communication device after said predetermined registration information reception time has elapsed; and

exchanging a registration request that mutually registers link relations with one wireless communication device and transmitting the request, when said existence notification is received by the other wireless communication device.

11. A wireless communication method according to claim 10, wherein

when in said registration signal detection step a registration signal caused by operation of a registration switch of the other wireless communication device is not detected within a predetermined registration information reception time after detecting a registration signal caused by operation of a registration switch provided on one wireless communication device,

in said existence notification step the other wireless communication device is notified a predetermined number of times of existence information concerning one wireless

communication device after said predetermined registration information reception time has elapsed; and

if there is no response from the other wireless communication device, link relation registration is not performed.

12. A wireless communication method according to claim 10, wherein

in said registration signal detection step, when a plurality of registration signals caused by operation of registration switches of a plurality of other wireless communication devices are detected within a predetermined registration information reception time after detecting a registration signal caused by operation of a registration switch provided on one wireless communication device, subsequent processing is not performed.

13. A wireless communication method according to claim 10, further comprising the step of mutually notifying registration with respect to the registration of said link relations, wherein

when said registration notification is encoded, encoding information is exchanged, and application information is transmitted, data encoded according to said encoding information is transmitted.

14. A wireless communication method according to claim 13, wherein

when said encoding information is exchanged while explicitly stating data input/output relations of equipment executing the same application as said application and application information is transmitted, data encoded according to said encoding information is transmitted.

15. A wireless communication system, which performs wireless communication among wireless communication devices connected to equipment executing an application, comprising:

a wireless communication device which mutually sets input or output unidirectional device link relation with other wireless communication devices connected to equipment executing the same application as said application, based on information indicating the data input or output relation of equipment executing the same application as said application; and

another wireless communication device which mutually sets output or input unidirectional device link relation with a wireless communication device connected to equipment executing the same application as said application, based on information indicating the data output or input relation of equipment executing the same application as said application.